F 13

```
UUU         UUU EEEEEEEEEEEEEEE TTTTTTTTTTTTTTT PPPPPPPPPPPP       SSSSSSSSSSSS YYY         YYY
UUU         UUU EEEEEEEEEEEEEEE TTTTTTTTTTTTTTT PPPPPPPPPPPP       SSSSSSSSSSSS YYY         YYY
UUU         UUU EEEEEEEEEEEEEEE TTTTTTTTTTTTTTT PPPPPPPPPPPP       SSSSSSSSSSSS YYY         YYY
UUU         UUU EEE                   TTT       PPP         PPP SSS             YYY         YYY
UUU         UUU EEE                   TTT       PPP         PPP SSS             YYY         YYY
UUU         UUU EEE                   TTT       PPP         PPP SSS             YYY         YYY
UUU         UUU EEE                   TTT       PPP         PPP SSS                YYY   YYY
UUU         UUU EEE                   TTT       PPP         PPP SSS                YYY   YYY
UUU         UUU EEE                   TTT       PPP         PPP SSS                YYY   YYY
UUU         UUU EEEEEEEEEEEE          TTT       PPPPPPPPPPPP       SSSSSSSSS          YYY
UUU         UUU EEEEEEEEEEEE          TTT       PPPPPPPPPPPP       SSSSSSSSS          YYY
UUU         UUU EEEEEEEEEEEE          TTT       PPPPPPPPPPPP       SSSSSSSSS          YYY
UUU         UUU EEE                   TTT       PPP                         SSS       YYY
UUU         UUU EEE                   TTT       PPP                         SSS       YYY
UUU         UUU EEE                   TTT       PPP                         SSS       YYY
UUU         UUU EEE                   TTT       PPP                         SSS       YYY
UUU         UUU EEE                   TTT       PPP                         SSS       YYY
UUU         UUU EEE                   TTT       PPP                         SSS       YYY
UUUUUUUUUUUUUUU EEEEEEEEEEEEEEE       TTT       PPP             SSSSSSSSSSSS          YYY
UUUUUUUUUUUUUUU EEEEEEEEEEEEEEE       TTT       PPP             SSSSSSSSSSSS          YYY
UUUUUUUUUUUUUUU EEEEEEEEEEEEEEE       TTT       PPP             SSSSSSSSSSSS          YYY
```

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_$


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```

F 12

```
**FILE**ID**SATSSS90
```

```
  SSSSSSSS    AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS    999999      000000
  SSSSSSSS    AAAAAA    TTTTTTTTTT    SSSSSSSS    SSSSSSSS    SSSSSSSS    999999      000000
SS          AA      AA      TT      SS          SS          SS          99      99  00      00
SS          AA      AA      TT      SS          SS          SS          99      99  00      00
SS          AA      AA      TT      SS          SS          SS          99      99  00    0000
SS          AA      AA      TT      SS          SS          SS          99      99  00    0000
  SSSSSS    AA      AA      TT        SSSSSS      SSSSSS      SSSSSS      99999999  00  00  00
  SSSSSS    AA      AA      TT        SSSSSS      SSSSSS      SSSSSS      99999999  00  00  00
        SS  AAAAAAAAAA      TT              SS          SS          SS          99  0000    00
        SS  AAAAAAAAAA      TT              SS          SS          SS          99  0000    00
        SS  AA      AA      TT              SS          SS          SS          99  00      00      ....
        SS  AA      AA      TT              SS          SS          SS          99  00      00      ....
SSSSSSSS    AA      AA      TT      SSSSSSSS    SSSSSSSS    SSSSSSSS      999999      000000        ....
SSSSSSSS    AA      AA      TT      SSSSSSSS    SSSSSSSS    SSSSSSSS      999999      000000        ....

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

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```

```
0000          .TITLE  SATSSS90 SATS SYST SERV TESTS  $CMKRNL/EXEC (SUCC S.C.)
0000          .IDENT  'V04-000'
0000
0000     ;
0000     ;****************************************************************************
0000     ;*                                                                          *
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0000     ;*                                                                          *
0000     ;*                                                                          *
0000     ;****************************************************************************
0000     ;
0000
0000     ;++
0000     ; FACILITY:     SYSTST (SATS SYSTEM SERVICE TESTS)
0000     ;
0000     ; ABSTRACT:
0000     ;
0000     ;               THIS MODULE CONTAINS SUBROUTINES WHICH, WHEN LINKED
0000     ; WITH SUCCOMMON.OBJ, FORM TEST MODULE SATSSS90 TO TEST SUCCESSFUL
0000     ; OPERATION OF THE $CMKRNL/EXEC SYSTEM SERVICES. EACH SERVICE IS INVOKED
0000     ; UNDER VARIOUS INPUT CONDITIONS WITH VARYING INPUT PARAMETERS. ONLY
0000     ; SUCCESSFUL STATUS CODES ARE EXPECTED IN THIS TEST MODULE.  CORRECT
0000     ; OPERATION OF EACH SERVICE FOR EACH OF ITS ISSUANCES IS VERIFIED BY
0000     ; CHECKING FOR AN SS$_NORMAL STATUS CODE, EXPECTED RETURN ARGUMENTS
0000     ; AND EXPECTED FUNCTIONALITY PERFORMED.
0000     ;
0000     ; ENVIRONMENT:  USER MODE IMAGE, NEEDS CMKRNL PRIVILEGE,
0000     ;               DYNAMICALLY ACQUIRES OTHER PRIVILEGES, AS NEEDED.
0000     ;
0000     ; AUTHOR: THOMAS L. CAFARELLA,          CREATION DATE: MAY, 1978
0000     ;
0000     ; MODIFIED BY:
0000     ;
0000     ;       , : VERSION
0000     ; 01    -
0000     ;--
```

```
                 0000     54            .SBTTL  DECLARATIONS
                 0000     55 ;
                 0000     56 ; INCLUDE FILES:
                 0000     57 ;
                 0000     58            $PRVDEF                                  ; PRIVILEGE BIT DEFINITIONS
                 0000     59            $PHDDEF                                  ; PROCESS HEADER OFFSETS
                 0000     60            $PSLDEF                                  ; MODE SYMBOL DEFINITIONS
                 0000     61            $LOGDEF                                  ; LOG NAME TABLE DEFINITIONS
                 0000     62 ;
                 0000     63 ; MACROS:
                 0000     64 ;
                 0000     65 ;
                 0000     66 ; EQUATED SYMBOLS:
                 0000     67 ;
        0000000A 0000     68 RLEN               = 10                   ; NO. OF RANDOM LWORDS FOR ARG LIST
        0000003C 0000     69 STRING_MASK        = ^M<R2,R3,R4,R5>      ; REGISTER SAVE MASK FOR CMPC INSTRUCTION
                 0000     70 ;
                 0000     71 ; OWN STORAGE:
                 0000     72 ;
```

```
          00000000    74          .PSECT  RODATA,RD,NOWRT,NOEXE,LONG
              0000    75 TEST_MOD_NAME:: STRING  C,<SATSSS90>      ; TEST MODULE NAME
              0009    76 TEST_MOD_NAME_D: STRING I,<SATSSS90>      ; TEST MODULE NAME DESCRIPTOR
              0019    77 MSG1_INP_CTL:   STRING  I,<  SSCHM!4ZW: CONDITIONS:>
              0039    78                                           ; FAO CTL STRING FOR MSG1 IN SUCCOMMON.MAR
              0039    79 MSG3_ERR_CTL::  STRING  I,< *SSCHM!4ZW: !AS>
              0051    80                                           ; FAO CTL STRING FOR MSG3 IN SUCCOMMON.MAR
 00000000     0051    81 ARGLST0:        .LONG   0                 ; ZERO LENGTH ARG LIST
 00000002     0055    82 PMODE_LOG:      .LONG   2                 ; UNIQUE LOGICAL NAME ...
 00000000'    0059    83                 .ADDRESS TESTNUM          ; ... FOR EACH TEST CASE
```

```
                 00000000     85              .PSECT  RWDATA,RD,WRT,NOEXE,LONG
         00000008  0000     86 PRIVMASK:         .BLKQ   1               ; ADDR OF PRIVILEGE MASK (IN PHD)
         0000000C  0008     87 ARGLST:           .BLKL   1               ; HOLDS CURRENT COND 1 TABLE ENTRY
         0000000A  000C     68 ARGLSTR:          .LONG   RLEN            ; ARG LIST TO CONTAIN ...
         00000038  0010     89                   .BLKL   RLEN            ; ... RANDOM DATA
         00000040  0038     90 ARGLSTDESC1:      .BLKL   2               ; DESCRIPTOR FOR ARG LIST (BEFORE RTN CALL)
                   0040     91 ARGLSTDESC2:      STRING  0,4*<RLEN+1>    ; DESCR'R FOR ARG LIST (DURING RTN CALL)
         00000075  0074     92 RTNMODE:          .BLKB   1               ; MODE IN WHICH PRIV MODE RTN GETS CONTROL
                   0075     93 PMODE_EQL:        STRING  0,1             ; EQUIVALENCE NAME STRING
```

```
                    007E     95        .SBTTL  CONDITION TABLES
                    007E     96 ;
                    007E     97 ;      ***** CONDITION TABLES FOR CMKRNL/CMEXEC SYSTEM SERVICES *****
                    007E     98 ;
                    007E     99        COND    1,NOTARG,<ARGUMENT LIST TYPE>,-
                    007E    100                   <ARG LIST NOT SPECIFIED>,-
                    007E    101                   <ARG LIST SPECIFIED WITH 0 ARGS>,-
                    007E    102                   <ARG LIST SPECIFIED WITH SEVERAL ARGS>,-
                    007E    103
          00000000  00F9    104                       .LONG          0        ; ARG LIST NOT SPECIFIED
          00000051' 00FD    105                       .ADDRESS       ARGLSTO  ; ARG LIST WITH 0 ARGS
          0000000C' 0101    106                       .ADDRESS       ARGLSTR  ; ARG LIST WITH SEVERAL ARGS
                    0105    107 ;
                    0105    108        COND    2,NOTARG,<PRIVILEGED MODE SERVICE>,-
                    0105    109                   <$CMKRNL>,-
                    0105    110                   <$CMEXEC>,-
                    0105    111
                00  0136    112                       .BYTE          PSL$C_KERNEL ; $CMKRNL SERVICE
                01  0137    113                       .BYTE          PSL$C_EXEC   ; $CMEXEC SERVICE
                    0138    114 ;
                    0138    115        COND    3,NULL
                    0139    116
                    0139    117        COND    4,NULL
                    013A    118
                    013A    119        COND    5,NULL
                    013B    120
            00000000        121        .PSECT  SATSSS90,RD,WRT,EXE
```

```
                                  0000          .SBTTL  TM_SETUP, TM_CLEANUP
                                  0000  ;++
                                  0000  ; FUNCTIONAL DESCRIPTION:
                                  0000  ;
                                  0000  ;               TM_SETUP AND TM_CLEANUP ARE CALLED TO PERFORM
                                  0000  ; REQUIRED HOUSEKEEPING AT THE BEGINNING AND END, RESPECTIVELY, OF
                                  0000  ; TEST MODULE EXECUTION.
                                  0000  ;
                                  0000  ; CALLING SEQUENCE:
                                  0000  ;
                                  0000  ;       BSBW TM_SETUP   BSBW TM_CLEANUP
                                  0000  ;
                                  0000  ; INPUT PARAMETERS:
                                  0000  ;
                                  0000  ;       NONE
                                  0000  ;
                                  0000  ; IMPLICIT INPUTS:
                                  0000  ;
                                  0000  ;       NONE
                                  0000  ;
                                  0000  ; OUTPUT PARAMETERS:
                                  0000  ;
                                  0000  ;       NONE
                                  0000  ;
                                  0000  ; IMPLICIT OUTPUTS:
                                  0000  ;
                                  0000  ;       TM_SETUP:  COND TABLE INDEX REGISTERS (R2,3,4,5,6) CLEARED;
                                  0000  ;                  ALL PRIVILEGES ACQUIRED.
                                  0000  ;
                                  0000  ; COMPLETION CODES:
                                  0000  ;
                                  0000  ;       EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
                                  0000  ;
                                  0000  ; SIDE EFFECTS:
                                  0000  ;
                                  0000  ;       SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
                                  0000  ;       (VIA RSB) IF ERROR ENCOUNTERED.
                                  0000  ;
                                  0000  ;--
                                  0000
                                  0000
                                  0000
                                  0000  TM_SETUP::
                           52 D4  0000          CLRL    R2                      ; INITIALIZE
                           53 D4  0002          CLRL    R3                      ; .. CONDITION
                           54 D4  0004          CLRL    R4                      ; .... TABLE
                           55 D4  0006          CLRL    R5                      ; ...... INDEX
                           56 D4  0008          CLRL    R6                      ; ........ REGISTERS
                        FFF3' 30  000A          BSBW    MOD_MSG_PRINT           ; PRINT TEST MODULE BEGIN MSG
00000000'EF   00000000'EF     DE  000D          MOVAL   TEST_MOD_SUCC,TMD_ADDR  ; ASSUME END MSG WILL SHOW SUCCESS
     03   00  00000000'8F     F0  0018          INSV    #SUCCESS,#0,#3,MOD_MSG_CODE ; ADJUST STATUS CODE FOR SUCCESS
              00000000'EF         0020
                                  0025          MODE    TO,5$,KRNL              ; KERNEL MODE TO ACCESS PHD
        59    00000000'9F     D0  0048          MOVL    @#CTL$GL_PHD,R9         ; GET PROCESS HEADER ADDRESS
      00000000'EF    69       DE  004F          MOVAL   PHD$Q_PRIVMSK(R9),PRIVMASK ; GET PRIV MASK ADDRESS
                                  0056          MODE    FROM,5$ ; BACK TO USER MODE
                                  0057          PRIV    ADD,ALL                 ; GET ALL PRIVILEGES
```

```
                                   0077   179             $SETPRN_S TEST_MOD_NAME_D         ; SET PROCESS NAME
                                   0084   180             SS_CHECK  NORMAL                  ; CHECK STATUS CODE RETURNED FROM SETPRN
                           3C  BB  00B2   181             PUSHR   #STRING_MASK              ; SAVE REGS R2-R5 FOR MOVC3
  00000010'EF    FF47 CF   28  28  00B4   182             MOVC3   #4*RLEN,TM_SETUP,ARGLSTR+4 ; GET "RLEN" LWORDS OF RANDOM DATA
                           3C  BA  00BE   183             POPR    #STRING_MASK              ; RESTORE REGS R2-R5
                               05  00C0   184             RSB                               ; RETURN TO MAIN ROUTINE
                                   00C1   185 TM_CLEANUP::
                        FF3C'  30  00C1   186             BSBW    MOD_MSG_PRINT             ; PRINT TEST MODULE END MSG
                               05  00C4   187             RSB                               ; RETURN TO MAIN ROUTINE
```

```
       00C5            .SBTTL  CONDITION SUBROUTINES - SETUP AND CLEANUP
       00C5      ;++
       00C5      ; FUNCTIONAL DESCRIPTION:
       00C5      ;
       00C5      ;               CONDX AND CONDX_CLEANUP ARE SUBROUTINES WHICH ARE EXECUTED
       00C5      ; BEFORE AND AFTER THE VERIFY SUBROUTINE, RESPECTIVELY, WHENEVER A NEW
       00C5      ; CONDITION X VALUE IS SELECTED (SEE FUNCTIONAL DESCRIPTION OF SUCCOMMON
       00C5      ; ROUTINE IN SUCCOMMON.MAR). ANY SETUP FUNCTION PARTICULAR TO THE
       00C5      ; CONDITION X TABLE IS INCLUDED IN THE CONDX SUBROUTINE AND CLEANED
       00C5      ; UP, IF NECESSARY, IN THE CONDX_CLEANUP SUBROUTINE. THIS INCLUDES,
       00C5      ; ESPECIALLY, CODE TO DETECT CONFLICTS AMONG CURRENT ENTRIES IN TWO
       00C5      ; OR MORE CONDITION TABLES. IF A CONFLICT IS DETECTED, A NON-ZERO
       00C5      ; VALUE IS STORED INTO CONFLICT, WHICH CAUSES THE CALLING ROUTINE
       00C5      ; (SUCCOMMON) TO SKIP THE CURRENT ENTRY IN THE CONDITION X TABLE.
       00C5      ;
       00C5      ; CALLING SEQUENCE:
       00C5      ;
       00C5      ;       BSBW CONDX   BSBW CONDX_CLEANUP
       00C5      ;         WHERE X = 1,2,3,4,5
       00C5      ;
       00C5      ; INPUT PARAMETERS:
       00C5      ;
       00C5      ;       CONFLICT = 0
       00C5      ;
       00C5      ; IMPLICIT INPUTS:
       00C5      ;
       00C5      ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
       00C5      ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
       00C5      ;
       00C5      ; OUTPUT PARAMETERS:
       00C5      ;
       00C5      ;       CONFLICT SET TO NON-ZERO IF COND TABLE CONFLICT DETECTED.
       00C5      ;
       00C5      ; IMPLICIT OUTPUTS:
       00C5      ;
       00C5      ;       R2,3,4,5,6 PRESERVED
       00C5      ;
       00C5      ; COMPLETION CODES:
       00C5      ;
       00C5      ;       NONE
       00C5      ;
       00C5      ; SIDE EFFECTS:
       00C5      ;
       00C5      ;       NONE
       00C5      ;
       00C5      ;--
       00C5
       00C5
       00C5
       00C5      COND1::
  05   00C5             RSB                             ; RETURN TO MAIN ROUTINE
       00C6      COND1_CLEANUP::
  05   00C6             RSB                             ; RETURN TO MAIN ROUTINE
       00C7      COND2::
  05   00C7             RSB                             ; RETURN TO MAIN ROUTINE
       00C8      COND2_CLEANUP::
  05   00C8             RSB                             ; RETURN TO MAIN ROUTINE
```

```
       00C9   246 COND3::
   05  00C9   247              RSB                          ; RETURN TO MAIN ROUTINE
       00CA   248 COND3_CLEANUP::
   05  00CA   249              RSB                          ; RETURN TO MAIN ROUTINE
       00CB   250 COND4::
   05  00CB   251              RSB                          ; RETURN TO MAIN ROUTINE
       00CC   252 COND4_CLEANUP::
   05  00CC   253              RSB                          ; RETURN TO MAIN ROUTINE
       00CD   254 COND5::
   05  00CD   255              RSB                          ; RETURN TO MAIN ROUTINE
       00CE   256 COND5_CLEANUP::
   05  00CE   257              RSB                          ; RETURN TO MAIN ROUTINE
```

```
                                    00CF   259          .SBTTL  FORM_CONDS
                                    00CF   260 ;++
                                    00CF   261 ; FUNCTIONAL DESCRIPTION:
                                    00CF   262 ;
                                    00CF   263 ;                FORM_CONDS FORMATS AND PRINTS INFORMATION ABOUT
                                    00CF   264 ;  THE CURRENT ELEMENT IN EACH OF THE CONDITION TABLES.
                                    00CF   265 ;
                                    00CF   266 ; CALLING SEQUENCE:
                                    00CF   267 ;
                                    00CF   268 ;        BSBW FORM_CONDS
                                    00CF   269 ;
                                    00CF   270 ; INPUT PARAMETERS:
                                    00CF   271 ;
                                    00CF   272 ;        NONE
                                    00CF   273 ;
                                    00CF   274 ; IMPLICIT INPUTS:
                                    00CF   275 ;
                                    00CF   276 ;        R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
                                    00CF   277 ;          FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
                                    00CF   278 ;        FOR X = 1,2,3,4,5 :
                                    00CF   279 ;                CONDX_T - TITLE TEXT FOR CONDX TABLE
                                    00CF   280 ;                CONDX_TAB - ELEMENT TEXT FOR CONDX TABLE
                                    00CF   281 ;                CONDX_C - CONTEXT OF THE CONDX TABLE
                                    00CF   282 ;                CONDX_E - DATA ELEMENTS OF THE CONDX TABLE
                                    00CF   283 ;
                                    00CF   284 ; OUTPUT PARAMETERS:
                                    00CF   285 ;
                                    00CF   286 ;        NONE
                                    00CF   287 ;
                                    00CF   288 ; IMPLICIT OUTPUTS:
                                    00CF   289 ;
                                    00CF   290 ;        NONE
                                    00CF   291 ;
                                    00CF   292 ; COMPLETION CODES:
                                    00CF   293 ;
                                    00CF   294 ;        NCNE
                                    00CF   295 ;
                                    00CF   296 ; SIDE EFFECTS:
                                    00CF   297 ;
                                    00CF   298 ;        NONE
                                    00CF   299 ;
                                    00CF   300 ;--
                                    00CF   301
                                    00CF   302
                                    00CF   303
                                    00CF   304 FORM_CONDS::
                                    00CF   305          $FAO_S  MSG1_INP_CTL,FAO_LEN,FAO_DESC,TESTNUM
                                    00EE   306                                          ; FORMAT CONDITIONS HEADER MSG
                    FF0F'     30    00EE   307          BSBW    OUTPUT_MSG              ; ... AND PRINT IT
               14     00      91    00F1   308          CMPB    #COND1_C,#NULL          ; IS CONDITION 1 NULL ?
                      03      12    00F4   309          BNEQU   10$                     ; NO -- CONTINUE
                    00BF      31    00F6   310          BRW     FORM_CONDSX             ; YES -- SUBROUTINE IS FINISHED
                                    00F9   311 10$:
  00000000'EF    0000007E'EF  DE    00F9   312          MOVAL   COND1_T,MSG_A           ; SAVE ADDRESS OF CONDITION 1 TITLE FOR FAO
00000000'EF    00000092'EF42  D0    0104   313          MOVL    COND1_TAB[R2],MSG_B     ; SAVE ADDR OF COND 1 CURR TEXT ELT FOR FAO
        00000000'EF       00  90    0110   314          MOVB    #CONDT_C,MSG_CTXT       ; SAVE CONDITION 1 CONTEXT FOR FAO
                                    0117   315          MOV_VAL COND1_C,CONDT_E[R2],MSG_DATA1 ; GIVE COND 1 DATA VALUE TO FAO
                      FEE6'  30  0117    316          BSBW     WRITE_MSG2             ; FORMAT AND WRITE CONDITION 1 MSG
                  14     00  91  011A    317          CMPB     #COND2_C,#NULL         ; IS CONDITION 2 NULL ?
                         03  12  011D    318          BNEQU    20$                    ; NO -- CONTINUE
                       0096  31  011F    319          BRW      FORM_CONDSX            ; YES -- SUBROUTINE IS FINISHED
                                 0122    320 20$:
  00000000'EF   00000105'EF  DE  0122    321          MOVAL    COND2_T,MSG_A          ; SAVE ADDRESS OF CONDITION 2 TITLE FOR FAO
 00000000'EF   0000011E'EF43 D0  012D    322          MOVL     COND2_TAB[R3],MSG_B    ; SAVE ADDR OF COND 2 CURR TEXT ELT FOR FAO
            00000000'EF  00  90  0139    323          MOVB     #COND2_C,MSG_CTXT      ; SAVE CONDITION 2 CONTEXT FOR FAO
                                 0140    324          MOV_VAL  COND2_C,COND2_E[R3],MSG_DATA1 ; GIVE COND 2 DATA VALUE TO FAO
                      FEBD'  30  0140    325          BSBW     WRITE_MSG2             ; FORMAT AND WRITE CONDITION 2 MSG
                  14     14  91  0143    326          CMPB     #COND3_C,#NULL         ; IS CONDITION 3 NULL ?
                         03  12  0146    327          BNEQU    30$                    ; NO -- CONTINUE
                       006D  31  0148    328          BRW      FORM_CONDSX            ; YES -- SUBROUTINE IS FINISHED
                                 014B    329 30$:
  00000000'EF   00000138'EF  DE  014B    330          MOVAL    COND3_T,MSG_A          ; SAVE ADDRESS OF CONDITION 3 TITLE FOR FAO
 00000000'EF   00000138'EF44 D0  0156    331          MOVL     COND3_TAB[R4],MSG_B    ; SAVE ADDR OF COND 3 CURR TEXT ELT FOR FAO
            00000000'EF  14  90  0162    332          MOVB     #COND3_C,MSG_CTXT      ; SAVE CONDITION 3 CONTEXT FOR FAO
                                 0169    333          MOV_VAL  COND3_C,COND3_E[R4],MSG_DATA1 ; GIVE COND 3 DATA VALUE TO FAO
                      FE94'  30  0169    334          BSBW     WRITE_MSG2             ; FORMAT AND WRITE CONDITION 3 MSG
                  14     14  91  016C    335          CMPB     #COND4_C,#NULL         ; IS CONDITION 4 NULL ?
                         47  13  016F    336          BEQLU    FORM_CONDSX            ; YES -- SUBROUTINE IS FINISHED
  00000000'EF   00000139'EF  DE  0171    337          MOVAL    COND4_T,MSG_A          ; SAVE ADDRESS OF CONDITION 4 TITLE FOR FAO
 00000000'EF   00000139'EF45 D0  017C    338          MOVL     COND4_TAB[R5],MSG_B    ; SAVE ADDR OF COND 4 CURR TEXT ELT FOR FAO
            00000000'EF  14  90  0188    339          MOVB     #COND4_C,MSG_CTXT      ; SAVE CONDITION 4 CONTEXT FOR FAO
                                 018F    340          MOV_VAL  COND4_C,COND4_E[R5],MSG_DATA1 ; GIVE COND 4 DATA VALUE TO FAO
                      FE6E'  30  018F    341          BSBW     WRITE_MSG2             ; FORMAT AND WRITE CONDITION 4 MSG
                  14     14  91  0192    342          CMPB     #COND5_C,#NULL         ; IS CONDITION 5 NULL ?
                         21  13  0195    343          BEQLU    FORM_CONDSX            ; YES -- SUBROUTINE IS FINISHED
  00000000'EF   0000013A'EF  DE  0197    344          MOVAL    COND5_T,MSG_A          ; SAVE ADDRESS OF CONDITION 5 TITLE FOR FAO
 00000000'EF   0000013A'EF46 D0  01A2    345          MOVL     COND5_TAB[R6],MSG_B    ; SAVE ADDR OF COND 5 CURR TEXT ELT FOR FAO
            00000000'EF  14  90  01AE    346          MOVB     #COND5_C,MSG_CTXT      ; SAVE CONDITION 5 CONTEXT FOR FAO
                                 01B5    347          MOV_VAL  COND5_C,COND5_E[R6],MSG_DATA1 ; GIVE COND 5 DATA VALUE TO FAO
                      FE48'  30  01B5    348          BSBW     WRITE_MSG2             ; FORMAT AND WRITE CONDITION 5 MSG
                                 01B8    349 FORM_CONDSX:
                             05  01B8    350          RSB                             ; RETURN TO CALLER
```

```
01B9          .SBTTL  VERIFY
01B9   ;++
01B9   ; FUNCTIONAL DESCRIPTION:
01B9   ;
01B9   ;               VERIFY IS CALLED ONCE FOR EACH COMBINATION OF CONDITION
01B9   ; TABLE VALUES (AS DETERMINED BY THE INDEX REGISTERS R2,3,4,5,6 FOR
01B9   ; COND TABLES 1,2,3,4,5, RESPECTIVELY). VERIFY ESTABLISHES THE CONDITIONS
01B9   ; SPECIFIED BY THE COND TABLES AND ISSUES THE SUBJECT SYSTEM SERVICE
01B9   ; ($CMKRNL OR $CMEXEC). THEN, THE SUCCESSFUL OPERATION OF THE SERVICE IS
01B9   ; VERIFIED BY EXAMINING THE STATUS CODE RETURNED, THE VALUES FOR RETURN ARGS
01B9   ; AND THE FUNCTIONALITY PERFORMED. THE EXAMINATIONS TAKE THE FORM OF
01B9   ; COMPARISONS AGAINST EXPECTED VALUES. ANY FAILING COMPARISON CAUSES AN
01B9   ; ERR_EXIT MACRO TO BE EXECUTED (EITHER DIRECTLY, OR INDIRECTLY,
01B9   ; THROUGH THE SS_CHECK MACRO); ERR_EXIT SETS EFLAG TO NON-ZERO,
01B9   ; PRINTS ERROR MESSAGES AND CAUSES AN IMMEDIATE RSB TO CALLER.
01B9   ; WHEN ERR_EXIT IS EXECUTED, FURTHER CALLS TO VERIFY ARE SUPPRESSED,
01B9   ; AND, AFTER EXECUTING CLEANUP SUBROUTINES, THE IMAGE EXITS.
01B9   ;
01B9   ; CALLING SEQUENCE:
01B9   ;
01B9   ;       BSBW VERIFY
01B9   ;
01B9   ; INPUT PARAMETERS:
01B9   ;
01B9   ;       NONE
01B9   ;
01B9   ; IMPLICIT INPUTS:
01B9   ;
01B9   ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
01B9   ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
01B9   ;       FOR X = 1,2,3,4,5 :
01B9   ;               CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
01B9   ;                 TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
01B9   ;                 ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
01B9   ;                 FOR CONDX_E.
01B9   ;
01B9   ; OUTPUT PARAMETERS:
01B9   ;
01B9   ;       NONE
01B9   ;
01B9   ; IMPLICIT OUTPUTS:
01B9   ;
01B9   ;       VERIFY HAS NO OUTPUT. SINCE ITS PURPOSE IS TO TEST FOR ERRORS,
01B9   ;       IT MERELY RETURNS TO CALLER NORMALLY AFTER THE TESTS, PROVIDING
01B9   ;       ALL WERE SUCCESSFUL; IF AN ERROR IS DISCOVERED, RETURN IS VIA
01B9   ;       AN ERR_EXIT OR SS_CHECK MACRO, BOTH OF WHICH DOCUMENT DETECTED
01B9   ;       ERRORS.
01B9   ;
01B9   ; COMPLETION CODES:
01B9   ;
01B9   ;       EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
01B9   ;
01B9   ; SIDE EFFECTS:
01B9   ;
01B9   ;       SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
01B9   ;       (VIA RSB) IF ERROR ENCOUNTERED.
01B9   ;
```

```
                                      01B9   409 ;--
                                      01B9   410
                                      01B9   411
                                      01B9   412
                                      01B9   413 VERIFY::
               00000000'EF     95     01B9   414             TSTB    CFLAG                      ; SHOULD CONDITIONS BE PRINTED ?
                        03     13     01BF   415             BEQL    5$                         ; NO -- CONTINUE
                      FF0B     30     01C1   416             BSBW    FORM_CONDS                 ; YES -- FMT & PRINT ALL CONDS FOR THIS T.C.
                                      01C4   417 5$:
  00000008'EF   000000F9'EF42  D0     01C4   418             MOVL    COND1_E[R2],ARGLST         ; GET CURRENT ENTRY OUT OF TABLE
   00000074'EF   00000000'EF   90     01D0   419             MOVB    ONES,RTNMODE               ; INIT MODE FOR EACH TST CASE
   00000010'EF   00000000'EF   B0     01DB   420             MOVW    TESTNUM,ARGLSTR+4          ; MAKE RANDOM DATA UNIQUE FOR EACH T.C.
                                      01E6   421 ;
                                      01E6   422 ; ****** SYSTEM SERVICE CALL WHICH IS THE SUBJECT OF THIS TEST CASE ******
                                      01E6   423 ;
          00   00000136'EF43   91     01E6   424             CMPB    COND2_E[R3],#PSL$C_KERNEL  ; IS THIS A CMKRNL REQUEST ?
                        15     13     01EE   425             BEQLU   10$                        ; YES -- GO DO IT
                                      01F0   426             $CMEXEC_S  PRIVMODERTN,@ARGLST    ; ISSUE CMEXEC REQUEST
                        13     11     0203   427             BRB     15$                        ; ... AND GO CHECK RESULTS
                                      0205   428 10$:
                                      0205   429             $CMKRNL_S PRIVMODERTN,@ARGLST     ; ISSUE KERNEL REQUEST
                                      0218   430 15$:
          57   00000000'EF     D0     0218   431             MOVL    ONES,R7                    ; PREPARE FOR R0 COMPARISON
          57   00000000'EF     B0     021F   432             MOVW    TESTNUM,R7                 ; ......
                    57  50     D1     0226   433             CMPL    R0,R7                      ; DID PRIV MODE RTN RETURN EXPECTED STATUS ?
                        73     13     0229   434             BEQLU   20$                        ; YES -- CONTINUE
          00000000'EF   57     D0     022B   435             MOVL    R7,EXPV                    ; NO -- LOAD EXPECTED AND ....
          00000000'EF   50     D0     0232   436             MOVL    R0,RECV                    ; ... RETURNED VALUES, THEN EXIT
                                      0239   437             ERR_EXIT LONG,<INCORRECT USER-GENERATED STATUS CODE>, -
                                      0239   438                     < RETURNED FROM PRIV MODE RTN>
                                      029E   439 20$:
  00000136'EF43  00000074'EF   91     029E   440             CMPB    RTNMODE,COND2_E[R3]        ; DID PRIV MODE RTN REALLY GET EXP MODE ?
                        74     13     02AA   441             BEQLU   30$                        ; YES -- CONTINUE
  00000000'EF   00000136'EF43  90     02AC   442             MOVB    COND2_E[R3],EXPV           ; NO -- LOAD UP EXPECTED AND
   00000000'EF   00000074'EF   90     02B8   443             MOVB    RTNMODE,RECV               ; ... RECEIVED VALUES, THEN EXIT
                                      02C3   444             ERR_EXIT BYTE,<PRIVILEGED MODE SERVICE GAVE USER>, -
                                      02C3   445                     < ROUTINE INCORRECT MODE>
                                      0320   446 30$:
   00000038'EF   00000040'EF   D0     0320   447             MOVL    ARGLSTDESC2,ARGLSTDESC1    ; GET LENGTH OF DESCRIPTOR
   0000003C'EF   00000008'EF   D0     032B   448             MOVL    ARGLST,ARGLSTDESC1+4       ; ... AND ITS ADDRESS
                        52     D5     0336   449             TSTL    R2                         ; 1ST CONDITION 1 ELEMENT ?
                        0B     12     0338   450             BNEQ    40$                        ; NO -- CONTINUE
   0000003C'EF   00000051'EF   DE     033A   451             MOVAL   ARGLST0,ARGLSTDESC1+4      ; YES -- USE 0 ARG LIST
                                      0345   452 40$:
                        3C     BB     0345   453             PUSHR   #STRING_MASK               ; SAVE REGS R2-R5 FOR CMPC
   0000003C'FF   00000038'EF   29     0347   454             CMPC3   ARGLSTDESC1,@ARGLSTDESC1+4,@ARGLSTDESC2+4
                 00000044'FF          0352
                                      0357   455                                                ; IS EXPECTED LIST = ACTUAL LIST ?
                        3C     BA     0357   456             POPR    #STRING_MASK               ; RESTORE REGS R2-R5
                        70     13     0359   457             BEQLU   VERIFYX                    ; YES -- ALL FINISHED
   00000000'EF   00000038'EF   7D     035B   458             MOVQ    ARGLSTDESC1,EXPV           ; NO -- LOAD UP EXPECTED AND
   00000000'EF   00000040'EF   7D     0366   459             MOVQ    ARGLSTDESC2,RECV           ; ... RECEIVED VALUES, THEN EXIT
                                      0371   460             ERR_EXIT DESC,<ARG LIST IN PRIV MODE ROUTINE >, -
                                      0371   461                     <CONTAINS INCORRECT DATA>
                                      03CB   462 VERIFYX:
                               05     03CB   463             RSB                                ; RETURN TO CALLER
          03CC          .SBTTL  VFY_CLEANUP
          03CC    ;++
          03CC    ; FUNCTIONAL DESCRIPTION:
          03CC    ;
          03CC    ;             VFY_CLEANUP EXECUTES SYSTEM SERVICES TO UNDO THE
          03CC    ; EFFECT OF THOSE ISSUED IN THE VERIFY SUBROUTINE. VFY_CLEANUP MUST
          03CC    ; ASSUME THAT VERIFY MAY NOT HAVE EXECUTED IN ITS ENTIRETY (IF AN
          03CC    ; ERROR IS FOUND). ALSO, VFY_CLEANUP MAY ISSUE SS_CHECK OR ERR_EXIT
          03CC    ; ONLY AFTER PERFORMING ALL OF ITS CLEANUP OPERATIONS; THIS IS REQUIRED
          03CC    ; IN THE EVENT THAT VFY_CLEANUP IS CALLED DURING ERROR PROCESSING,
          03CC    ; WHEN PERFORMING THE REQUIRED CLEANUP IS MORE IMPORTANT THAN
          03CC    ; POSSIBLY DISCOVERING A SECOND ERROR.
          03CC    ;
          03CC    ; CALLING SEQUENCE:
          03CC    ;
          03CC    ;       BSBW VFY_CLEANUP
          03CC    ;
          03CC    ; INPUT PARAMETERS:
          03CC    ;
          03CC    ;       NONE
          03CC    ;
          03CC    ; IMPLICIT INPUTS:
          03CC    ;
          03CC    ;       R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
          03CC    ;         FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
          03CC    ;       FOR X = 1,2,3,4,5 :
          03CC    ;               CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
          03CC    ;                 TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
          03CC    ;                 ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
          03CC    ;                 FOR CONDX_E.
          03CC    ;
          03CC    ; OUTPUT PARAMETERS:
          03CC    ;
          03CC    ;       NONE
          03CC    ;
          03CC    ; IMPLICIT OUTPUTS:
          03CC    ;
          03CC    ;       NONE
          03CC    ;
          03CC    ; COMPLETION CODES:
          03CC    ;
          03CC    ;       EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
          03CC    ;
          03CC    ; SIDE EFFECTS:
          03CC    ;
          03CC    ;       SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
          03CC    ;       (VIA RSB) IF ERROR ENCOUNTERED.
          03CC    ;
          03CC    ;--
          03CC
          03CC
          03CC
          03CC    VFY_CLEANUP::
     05   03CC          RSB                             ; RETURN TO CALLER
```

```
                              03CD          .SBTTL KERNEL OR EXEC MODE ROUTINE
                              03CD      ;
                              03CD      ;       THIS ROUTINE IS INVOKED IN THE VERIFY SUBROUTINE BY A $CMKRNL
                              03CD      ;       OR $CMEXEC SYSTEM SERVICE. ITS FUNCTION IS TO ASCERTAIN
                              03CD      ;       ITS EXECUTION MODE, STORING ITS VALUE IN RTNMODE;
                              03CD      ;       SET A RETURN STATUS VALUE IN R0; AND,STORE THE
                              03CD      ;       CONTENTS OF ITS ARGUMENT LIST IN ARGLSTDESC2.
                              03CD      ;       ALL THREE OF THESE DATA BASES (RTNMODE, R0,
                              03CD      ;       ARGLSTDESC2) WILL BE EXAMINED FOR EXPECTED VALUES
                              03CD      ;       IN THE VERIFY SUBROUTINE.
                              03CD      ;
                              03CD      PRIVMODERTN:
                       0FFC   03CD              .WORD   ^M<R2,R3,R4,R5,R6,R7,R8,R9,R10,R11>
                              03CF      ;
                              03CF      ; FIND CURRENT EXECUTION MODE BY MAKING A LOG NAME AND TRANSLATING IT.
                              03CF      ;
                              03CF              $CRELOG_S TBLFLG=#LOG$C_PROCESS, -  ; DEFINE A LOG NAME
                              03CF                      LOGNAM=PMODE_LOG,       -
                              03CF                      EQLNAM=PMODE_EQL
                              03E6              $TRNLOG_S LOGNAM=PMODE_LOG, -     ; TRAN IT TO RECEIVE MODE
                              03E6                      RSLBUF=PMODE_EQL, -
                              03E6                      ACMODE=RTNMODE
                              0405              $DELLOG_S TBLFLG=#LOG$C_PROCESS, - ; NO LONGER NEED IT
                              0405                      LOGNAM=PMODE_LOG
               5C       D5    0416              TSTL    AP                          ; IS THERE AN ARGUMENT LIST ?
               0B       12    0418              BNEQ    10$                         ; YES -- CONTINUE
          58   04       9A    041A              MOVZBL  #4,R8                       ; NO -- ESTABLISH LENGTH OF NULL LIST
      00000044'FF       D4    041D              CLRL    @ARGLSTDESC2+4              ; ... AND SET ZERO ARGUMENT COUNT
               0F       11    0423              BRB     20$                         ; JOIN COMMON CODE
                              0425      10$:
     58   04   6C       C5    0425              MULL3   (AP),#4,R8                  ; GET NUMBER OF BYTES IN ARG LIST
          58   04       C0    0429              ADDL2   #4,R8                       ; ... ADD IN LENGTH OF LIST HEADER
00000044'FF    6C  58   28    042C              MOVC3   R8,(AP),@ARGLSTDESC2+4      ; SAVE ENTIRE ARG LIST INCL HDR
                              0434      20$:
   00000040'EF     58   D0    0434              MOVL    R8,ARGLSTDESC2              ; PUT LENGTH IN DESCRIPTOR
   50   00000000'EF     D0    043B              MOVL    ONES,R0                     ; SAVE RETURN DATA IN R0
   50   00000000'EF     B0    0442              MOVW    TESTNUM,R0                  ; ... MAKE IT UNIQUE TO TEST CASE
                   04         0449              RET                                 ; EXIT FROM PRIV MODE RTN
                              044A              .END
```

```
$$$$                 = 0000037B R      04     EXPV                   *********  X    04
$$$CHARS             = 00000035               FAO_DESC               *********  X    04
$$$CHARS1            = 00000007               FAO_LEN                *********  X    04
$$$CHARS2            = 00000007               FORM_CONDS             000000CF RG     04
$$$CHARS3            = 00000000               FORM_CONDSX            000001B8 R      04
$$$CHARS4            = 00000000               LOG$C_PROCESS        = 00000002
$$$CHARS5            = 00000000               LONG                 = 00000004  G
$$$COND_A            = 00000001               MOD_MSG_CODE           *********  X    04
$$$STRINGS           = 00000001               MOD_MSG_PRINT          *********  X    04
$$$STRINGS2          = 00000005               MSG1_INP_CTL           00000019 R      02
$$T1                 = 00000000               MSG3_ERR_CTL           00000039 RG     02
$$T2                 = 00000004               MSG_A                  *********  X    04
ARGLST                 00000008 R      03     MSG_B                  *********  X    04
ARGLSTO                00000051 R      02     MSG_CTXT               *********  X    04
ARGLSTDESC1            00000038 R      03     NOTARG               = 00000000  G
ARGLSTDESC2            00000040 R      03     NULL                 = 00000014  G
ARGLSTR                0000000C R      03     ONES                   *********  X    04
BYTE                 = 00000001  G            OUTPUT_MSG             *********  X    04
CFLAG                  *********  X    04     PCV                    *********  X    04
CHMRTN                 *********  X    04     PHD$Q_PRIVMSK        = 00000000
CHM_CONT               *********  X    04     PMODE_EQL              00000075 R      03
COMP_SC                *********  X    04     PMODE_LOG              00000055 R      02
COND1                  000000C5 RG     04     PRIVMASK               00000000 R      03
COND1_C              = 00000000               PRIVMODERTN            000003CD R      04
COND1_CLEANUP          000000C6 RG     04     PRIV_ARGS            = 00000002
COND1_E                000000F9 R      03     PROCESS_ERR            *********  X    04
COND1_H                00000091 RG     03     PSL$C_EXEC           = 00000001
COND1_T                0000007E R      03     PSL$C_KERNEL         = 00000000
COND1_TAB              00000092 R      03     QUAD                 = 00000008  G
COND2                  000000C7 RG     04     RECV                   *********  X    04
COND2_C              = 00000000               REST_REGS              *********  X    04
COND2_CLEANUP          000000C8 RG     04     RLEN                 = 0000000A
COND2_E                00000136 R      03     RTNMODE                00000074 R      03
COND2_H                0000011D RG     03     SAVE_REGS              *********  X    04
COND2_T                00000105 R      03     SS$_NORMAL             *********  X    04
COND2_TAB              0000011E R      03     STRING_MASK          = 0000003C
COND3                  000000C9 RG     04     SUCCESS                *********  X    04
COND3_C              = 00000014               SYS$CMEXEC             ********* GX    04
COND3_CLEANUP          000000CA RG     04     SYS$CMKRNL             ********* GX    04
COND3_H                00000138 RG     03     SYS$CRELOG             ********* GX    04
COND3_T                00000138 R      03     SYS$DELLOG             ********* GX    04
COND3_TAB              00000138 R      03     SYS$FAO                *********  X    04
COND4                  000000CB RG     04     SYS$SETPRN             ********* GX    04
COND4_C              = 00000014               SYS$SETPRV             ********* GX    04
COND4_CLEANUP          000000CC RG     04     SYS$TRNLOG             ********* GX    04
COND4_H                00000139 RG     03     TESTNUM                *********  X    02
COND4_T                00000139 R      03     TEST_MOD_NAME          00000000 RG     02
COND4_TAB              00000139 R      03     TEST_MOD_NAME_D        00000009 R      02
COND5                  000000CD RG     04     TEST_MOD_SUCC          *********  X    04
COND5_C              = 00000014               TMD_ADDR               *********  X    04
COND5_CLEANUP          000000CE RG     04     TM_CLEANUP             000000C1 RG     04
COND5_H                0000013A RG     03     TM_SETUP               00000000 RG     04
COND5_T                0000013A R      03     VERIFY                 000001B9 RG     04
COND5_TAB              0000013A R      03     VERIFYX                000003CB R      04
CTL$GL_PHD             *********  X    04     VFY_CLEANUP            000003CC RG     04
DESC                 = 00000010  G            WORD                 = 00000002  G
EFLAG                  *********  X    04     WRITE_MSG2             *********  X    04
```

```
                                                +----------------+
                                                ! Psect synopsis !
                                                +----------------+

PSECT name                          Allocation          PSECT No.  Attributes
----------                          ----------          ---------  ----------
.  ABS  .                           00000000  (     0.)  00 (   0.)  NOPIC   USR   CON   ABS   LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
$ABS$                               00000000  (     0.)  01 (   1.)  NOPIC   USR   CON   ABS   LCL NOSHR   EXE   RD     WRT NOVEC BYTE
RODATA                              0000005D  (    93.)  02 (   2.)  NOPIC   USR   CON   REL   LCL NOSHR NOEXE   RD   NOWRT NOVEC LONG
RWDATA                              0000013B  (   315.)  03 (   3.)  NOPIC   USR   CON   REL   LCL NOSHR NOEXE   RD     WRT NOVEC LONG
SATSSS90                            0000044A  (  1098.)  04 (   4.)  NOPIC   USR   CON   REL   LCL NOSHR   EXE   RD     WRT NOVEC BYTE

                                             +------------------------+
                                             ! Performance indicators !
                                             +------------------------+

Phase                            Page faults    CPU Time       Elapsed Time
-----                            -----------    --------       ------------
Initialization                            30    00:00:00.08    00:00:00.42
Command processing                       107    00:00:00.74    00:00:04.97
Pass 1                                   250    00:00:06.85    00:00:13.17
Symbol table sort                          0    00:00:00.51    00:00:00.54
Pass 2                                   122    00:00:01.82    00:00:02.70
Symbol table output                       13    00:00:00.08    00:00:00.08
Psect synopsis output                      3    00:00:00.03    00:00:00.03
Cross-reference output                     0    00:00:00.00    00:00:00.00
Assembler run totals                     527    00:00:10.12    00:00:21.92

The working set limit was 1200 pages.
34758 bytes (68 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 360 non-local and 23 local symbols.
558 source lines were read in Pass 1, producing 23 object records in Pass 2.
37 pages of virtual memory were used to define 28 macros.

                                            +--------------------------+
                                            ! Macro library statistics !
                                            +--------------------------+

Macro library name                           Macros defined
------------------                           --------------
_$255$DUA28:[SHRLIB]UETP.MLB;1                            8
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                            2
_$255$DUA28:[SYSLIB]STARLET.MLB;2                        15
TOTALS (all libraries)                                   25

690 GETS were required to define 25 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:SATSSS90/OBJ=OBJ$:SATSSS90 MSRC$:SATSSS90/UPDATE=(ENH$:SATSSS90)+EXECML$/LIB+SHRLIB$:UETP/LIB
```

0425 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
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SATSSS74
LIS

SATSUT01
LIS

SATSUT05
LIS

SATSSS82
LIS

SATSSS90
LIS

SATSSS78
LIS

SATSSS80
LIS

SATSUT04
LIS

SATSUT06
LIS

SATSSS81
LIS

SATSSS91
LIS

SATSSS79
LIS

SATSSS83
LIS